

[0061] (I) The Light Which has Entered from the Organic EL Layer 16 into the Transparent Substrate 13 Through the First Electrode 15

[0062] The light which has reached the light exit surface 13a of the transparent substrate 13 at an angle smaller than the critical angle of the transparent substrate 13 is extracted from the light exit surface 13a to the outside of the lighting unit 10. The light which has reached the light exit surface 13a at an angle larger than the critical angle is totally reflected on the light exit surface 13a toward the organic EL element 14. The light which has been thus totally reflected is guided through the transparent substrate 13, and a part of the light or all the light enters the adhesive 12 functioning as a light scattering means. That is, the light whose incidence angle is smaller than the critical angle determined by a refractive index of the transparent substrate 13 and a refractive index of the scattering member 19, among the light which has entered the transparent substrate 13, is emitted from the light exit surface 13a. On the other hand, the light whose incidence angle is equal to or larger than the critical angle is totally reflected on the light exit surface 13a, and a large amount of the light is guided through the transparent substrate 13. The light, which is guided through the transparent substrate 13, travels through the end face of the transparent substrate 13 into the adhesive 12 between the adjacent panels 11.

[0063] (II) The Light which has not Been Capable of Entering from the First Electrode 15 to the Transparent Substrate 13

[0064] Such light is guided through the organic EL element 14, and a part of the light enters the adhesive 12.

[0065] (III) The Light which has Been Emitted from the Organic EL Element 16 Toward the Second Electrode 17

[0066] In a case where the second electrode 17 is a reflecting electrode, almost all the above-mentioned light is reflected toward the organic EL layer 16. Also, in a case where the second electrode 17 is not a reflecting electrode, the light whose incidence angle is larger than the critical angle on an interface between the organic EL layer 16 and the second electrode 17 (or a face in the second electrode 17 facing the above interface) is reflected toward the organic EL layer 16. The light which has been thus reflected totally or partially follows the route mentioned in the above-operation (I) or (II).

[0067] (IV) The Light Which has Entered the Adhesive 12

[0068] The light which has entered the adhesive 12 is partially or totally scattered by a light scattering means. The light whose traveling direction is varied toward the light extracting side of the lighting unit 10 is emitted from the adhesive 12 to the outside of the lighting unit 10. That is, the light which has reached the light scattering means is scattered, and a part of the light is emitted from the side of the light exit surface 13a.

[0069] For example, a large amount of light, which is totally reflected on the light exit surface 13a, among the light that has entered from the organic EL element 14 to the transparent substrate 13 is guided through the transparent substrate 13, and is emitted from the end portions of the transparent substrate 13, and therefore, such light could not be utilized (extracted) heretofore. In the present embodiment,

however, the light travels from the end faces of the transparent substrate 13 into the adhesive 12 between the adjacent panels 11. The light which reaches the light scattering means, among the light that has traveled into the adhesive 12, is scattered, and is emitted from the light exit surface 13a.

[0070] The light other than the above-mentioned light enters the adjacent transparent substrate 13 or the organic EL element 14, and follows the route mentioned in the above-operation (I) or (II). The light in the adhesive 12, which has traveled toward the opposite side of the light exit surface 13a, is reflected toward the light exit surface 13a, when the aforementioned reflecting member is provided on the opposite side. The light that has been thus reflected is partially or totally emitted from the light exit surface 13a to the outside of the lighting unit 10. The light that has not been emitted to the outside of the lighting unit 10 enters the adjacent transparent substrate 13 or the organic EL element 14, and follows the route mentioned in the above-operation (I) or (II).

[0071] It is noted that in a case where the scattering member 19 is provided on the lighting unit 10, the light which has been emitted from the light exit surface 13a to the outside of the lighting unit 10 is scattered (diffused) by the scattering member 19.

[0072] The lighting unit 10 has the above operation, and has the following beneficial effects.

[0073] (1) The light is emitted from the whole area of the light exit surface 13a.

[0074] As described above, this is because the light is emitted evenly from the portions (the peripheral portions of the panel 11, joints connecting the adjacent panels 11, space between the adjacent panels 11, and the adhesive 12) of the lighting unit 10, in which the organic EL element 14 is not provided, thereby preventing the peripheral portion of each panel 11, and the joints connecting each panel 11, from becoming extremely dark in comparison with a portion of the panel 11 in which the organic EL element 14 is provided. In addition, an equal amount of light is emitted from the peripheral portion of each panel 11 and the joints connecting each panel 11. That is, unevenness of brightness is prevented in comparison with the lighting unit 10 in which only the panels 11 are arranged without using the adhesive 12.

[0075] Additionally, since the scattering member 19 is placed on the light exit surface 13a of the transparent substrate 13, differential of brightness between a portion of the lighting unit 10 in which the organic EL element 14 is provided, and the peripheral portions and the joints of the panels 11 of the lighting unit 10 is further reduced.

[0076] This effect is obtained by providing the adhesive 12 functioning as a light scattering means in the lighting unit 10, and by using the bottom emission type of organic EL device as the panel 11.

[0077] Since the bottom emission type of organic EL device is used, conception is changed as follows. The light, which was conventionally emitted from the end face of the transparent substrate 13 to the outside of the lighting unit 10 and was not utilized, is guided to the adhesive 12 through the transparent substrate 13, and then is emitted from the adhesive 12 to the outside of the lighting unit 10.